CRUSTACEA.—*By Edward J. Miers, F.L.S., F.Z.S., Zoological Department, British Museum.*

(Plate XI.)

The species of Crustacea hitherto obtained at Kerguelen Island are so few in number that they cannot be supposed to represent in an adequate manner this department of the Fauna.

The Antarctic Expedition under Capt. Sir James Ross visited the island in the winter (May and June 1840), and of the species of Crustacea in the British Museum, apparently brought back by officers of that expedition from "Kerguelen Land," two are new to science.

A brief summary of the results obtained by the Challenger Expedition by dredging in the neighbourhood of Kerguelen Island, was given by the late Dr. R. von Willemöes-Suhm in a letter to Professor C. Th. E. von Siebold, published in the Zeitschrift f. Wissenschaft. Zool. xxiv., 1874. From it we learn that upon the island itself nothing was found except a small Brachyurous Decapod (probably the *Halicarcinus planatus*). The inhabitants of the 1st zone (not deeper than 40 faths.) comprised several species of *Serolis*, *Sphæroma*, *Arcturus*, some *Gammaridæ*, several species of *Caprella*, and some *Pycnogonida*. Richer and more interesting results were obtained in the 2nd zone (40 to 120 faths.), where *Tanais* and *Praniza*, very remarkable *Amphipoda*, *Mysidæ*, and a *Nebalia* were discovered.

The German Surveying and Transit of Venus Expedition dredged off the open coast, and collected, for the most part, along the rather exposed shores in the neighbourhood of Betsy Cove. They entered also Vulcan Cove and Foundry Branch, but whether they searched at all for Crustacea in these sheltered inlets is uncertain.

The collectors who accompanied respectively the English and American Transit of Venus Expeditions, were advisedly unprovided for dredging in deep water, and consequently their operations were confined to the beach, the laminarian zone, and depths external to the latter, not exceeding 10 fathoms. Mr. Eaton obtained 10 species, of which 7 were new to science. Dr. Kidder with more limited opportunities for work, obtaining 7 species, added 3 to the fauna (2 of them were new to science), and thus raised the total to 15.

No species of terrestrial *Isopoda*, of the family *Oniscidæ*, have been discovered on this island.

Among the 15 indigenous species, several are characteristic of the Antarctic region, which in its widest sense embraces Tierra del Fuego, the Falklands, and the lands and islands of the Antarctic Ocean. *Halicarcinus planatus* and *Sphæroma gigas* are known to inhabit the seas of Patagonia and New Zealand, and are especially abundant in the former area; *Cassidina emarginata* is indigenous also to

the Falklands and Patagonia; *Jæra pubescens* occurs at the Falklands, and *Serolis latifrons* has been obtained from New Zealand and the Aucklands.

In addition to the Kerguelen Island species, I have included *Serolis septem-carinata* from the Crozets in the present paper.

DECAPODA.

Pinnotheridæ.

Halicarcinus planatus.

Cancer planatus, Fab. Ent. Syst. 1793, ii., 446.

Leucosia planata, idem, Ent. Syst. Suppl. 1798, 350.

Hymenosoma leachii, Guer.-Mén., Icon. Rég. Anim. iii. Crust. 10, pl. x., 1; id., Voy. Coq. 1828, ii. 22.

Halicarcinus planatus, White, Ann. & Mag. of Nat. Hist. 1846, xviii. 178, pl. ii., 1; idem, List Crust. Brit. Mus. 1847, p. 33; Dana, U. S. Explor. Exped. 1852, xiii., Crust. part i., 385, pl. xxiv., 7; M. Edwards, Ann. Sc. Nat. 1853, ser. 3, xx. 223; Heller, Reise der Österr. Freg. Novara, 1865, Crust. p. 66; Miers, Cat. N. Zeal. Crust. 1876, p. 49; Smith, Bull. U. S. Nat. Mus. 1876, iii. 57.

Hymenosoma tridentatum, Jacq. & Lucas, Voy. del' Astrolabe, 1853, Zool. iii. Crust. p. 60, pl. v. 27.

Hab.—Kerguelen Island, very common everywhere on the *Macrocystis* (Eaton); on rocky beaches and at 5 fathoms (Kidder). Also Tierra del Fuego; the Falklands, abundant; New Zealand; the Auckland Islands.

It is to be noted that in White's figure of this curious little flat crab, the three frontal teeth are not made sufficiently prominent: they rise from under the raised marginal line bordering the front of the carapace.

The largest specimen in the series collected by Mr. Eaton is a little over 13 mm. in length.

ISOPODA.

Asellidæ.

[**Jaera pubescens.**

Dana, U. S. Explor. Exped. 1853, xiv., Crust. part ii., 744, pl. xlix., 9; Smith, Bulletin U. S. Nat. Mus. 1876, iii. 63.

Hab.—In company with *Sphæroma gigas* on rocky beaches. Kerguelen Island (Kidder); also Tierra del Fuego (Dana).]

Ægidæ.

Ægа semicarinata.

(Plate XI. fig. 1.)

Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 115.

Corpus punctatum, elongato-ovatum; coxis oblique bilineatis; ultimo segmentorum post-abdominis postice truncato levissiméque emarginato, carinâ longitudinali

lævi ad marginem posticam haud attingente; penultimo exterioribus ramorum appendicium subovatis, interioribus truncato-triangularibus, haud usque ad apicem segmenti sequentis attingentibus.

Body elongate-ovate, moderately convex, punctate; the punctulations very sparse or wanting on the anterior halves of the segments of the pereion, but more numerous and coarser upon those of the pleon, especially the last of them. Eyes large. Each segment of the pereion is traversed by a faint impressed transverse line in or about the middle; the sixth segment is slightly the longest. First five segments of the pleon subequal and very short; the sixth (the last) about as long as three-fourths of its width at the base, narrowed from its proximal to its truncate and slightly emarginate distal extremity, and with a slight impression near the base on each side of a rather indistinct, smooth, longitudinal median carina, which falls short of the posterior margin. Upper antennæ with the first two joints greatly dilated, the third joint very slender; the flagellum with about 11 joints hardly reaching as far as the anterior margin of the first segment of the pereion. Lower antennæ with the first five joints dilated, the first three of them very short, the fourth and fifth longer, and subequal to one another; the flagellum with about 21 joints, reaching just over the posterior margin of the first segment of the pereion. Pereiopoda with coxæ rather acute and produced behind, traversed by two oblique raised lines; the meros-joints of the four posterior pairs rather slender, the posterior margins entire, slightly carinated. Rami of the appendages of the penultimate segment of the pleon subequal, entire, ciliated, not reaching so far as the extremity of the segment; the outer ramus sub-oval; the inner triangular, broad and truncate at the end.

Length of the largest female 58 mm.

Hab.—Kerguelen Island.

Of this fine species one adult female, and four smaller examples, are in the collection of the British Museum.

Æ. semicarinata resembles *Æ. serripes*, M. Edwards (Hist. Nat. Crust. 1840, iii. 241) in having the caudal segment truncate; but is distinguished from it by the posterior margins of the thighs being entire, as well as by the appendages of the penultimate segment of the pleon not reaching to the posterior margin of the terminal segment.

Plate XI., fig. 1. *Æ. semicarinata* (nat. size); *a*, cephalon (enlarged); *b*, maxillipes; *c*, 1st pereiopus; *d*, 4th pereiopus.

Sphæromidæ.

Sphæroma gigas.

Leach, Dict. Sc. Nat. 1818, xii. 346; M. Edw. Hist. Nat. Crust. 1840, iii. 205; Dana, U. S. Explor. Exped. 1853, xiv., Crust. ii. 775, pl. lii. 1; Miers, Cat. N. Zeal. Crust. 1876, p. 110; Smith, Bull. U. S. Nat. Mus. 1876, iii. 63.

Hab.—Royal Sound (Am. & Engl. Tr. Ven. Exp.). Also "New Holland" (M. Ed.); Bay of Islands, N. Zealand (Dana); and the Auckland Islands (Brit. Mus.).

Mr. Eaton only collected a single small specimen of this species, but states that it is very common under stones on the shore, and in the kelp. A large series is in the collection of the British Museum, and many specimens are stated by Mr. Smith to have been obtained by the officers of the American Expedition. It is worthy of remark, that all of the specimens from Kerguelen Island collected by the American naturalists, as well as those in the British Museum, are the true *S. gigas* of Leach; and that there is no example among them of the variety named by White *lanceolata*, which occurs, as well as the normal form of the species, at the Falklands, where it appears to be as common as the typical *S. gigas* alone is at Kerguelen Island. The variety mentioned is characterised by the acutely lanceolate rami of the appendages of the penultimate segment of the pleon. I was at first disposed to suspect that this difference between the two forms was merely one of sex; but I have since observed adult males of both of them.

Dynamene eatoni.

(Plate XI., fig. 2.)

Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 73.

Corpus late ellipticum, lateribus subparallelis, convexum; ultimo segmentorum post-abdominis convexo, lateribus subrectis convergentibus, postice emarginato, excisurâ fere eâdem longitudine ac latitudine, rotundatâ; penultimo ramis appendicium subæqualibus, integris, ovalibus, usque ad excisuram segmenti sequenti vix attingentibus.

Body broadly elliptical, convex, smooth, naked, the sides of the pereion almost parallel. Cephalon transverse, closely encased within the first segment of the pereion, bordered in front with a thin raised line. Eyes very small. Segments of the pereion short, of equal length above; the first three with the posterior edge nearly straight, the next four bent slightly backwards at the sides. Segments of the pleon (the last excepted) coalescent, with the lines of union marked by incised lines at the sides; last segment convex, with the lateral margins almost straight, and with a rounded emargination, which is about as wide as deep, at the distal extremity. Upper antennæ with the basal two joints dilated, the first about twice as long as the second; the third joint very slender, and about as long as the second; the flagellum, with about 14 joints, reaches as far as the posterior margin of the first segment of the pereion. Lower antennæ with the first four joints slightly dilated, the first two short, the next two longer, the fourth usually the longest; the flagellum, composed of about 24 joints, reaches to the posterior margin of the third segment of the pereion. Pereiopoda slender, almost naked;

dactyli with two claws. Rami of the lateral appendages of the pleon subequal, oval, entire, not ciliated, reaching almost to the terminal notch of the following segment. Colour reddish or greyish brown, with darker spots.

Length of the largest (♂) 17; of the smallest 3 mm.

Hab.—Swain's Bay and Observatory Bay; common.

Mr. Eaton collected a good series of examples of different ages and sizes.

In contour *D. eatoni* somewhat resembles *D. dumerili*, Aud.,* which has been recorded from the coast of Natal; but in that species the terminal notch is much deeper, and the rami of the penultimate segment are much shorter.

Plate XI., fig. 2, *D. eatoni* (enlarged); *a*, cephalon (enlarged); *b*, mandible; *c*, maxillipes; *d*, 4th pereiopus.

Cassidina emarginata.

Cassidina emarginata Guérin-Ménev., Icon. Règne Anim., Texte Crust. p. 31; Cuningham, Trans. Lin. Soc. 1871, xxvii., part iv., 499, pl. lix. 4.

Cassidina latistylis, Dana, U.S. Explor. Exped. 1852, xiv.; Crust. part ii. 784, pl. lii. 12.

Hab.—Royal Sound and Swain's Bay. Also W. coast of Patagonia and the Straits of Magellan (Cunningh.), plentiful; Falkland Islands (Guér. Mén.).

The form of this species changes considerably with the advance of age. In young examples (those seen by me are nearly all of them females) the body is more convex, and is proportionally narrower than it is in the others; resembling the form figured as *C. latistylis* by Dana. In older specimens (males) from Kerguelen Island, the body is more depressed and is much broader than in the others; resembling Guérin-Méneville's description and Cuningham's figure. There are specimens of this latter form in the British Museum from the Straits of Magellan, and it is probable that the two may be identified as conditions of the same species.

ANISOPODA.

SEROLIDÆ.

Serolis latifrons.

Serolis latifrons (White, List Crust. Brit. Mus. 1847, p. 106:—name only, without description); Miers, Ann. & Mag. of Nat. Hist., 1875, xvi. 74; id. Cat. N. Zeal. Crust. 1876, p. 117, pl. iii. 7; Smith, Bull. U. S. Nat. Mus. 1876, iii. 63.

Corpus culminatum itaque convexum, acute ovatum; ultimo segmentorum post

* Dynamene dumerili.

Sphæroma dumerilii, Aud. in Sav. Desc. Ég. 1809, Explic. tab. Crust. i. 95, pl. xii. iv.; Krauss Südafr. Crust. 1843, p. 65.

S. savignyi, M. Edwards, Hist. Nat. Crust., 1840, iii. 208.

abdominis subtriangulari, postice emarginato, supra tricarinato, carinâ in medio unâ e basi ad apicem altâ, rectâ, alterâque utrinque minus expressâ prius ad marginem anticum et adjacente atque parallelâ, deinde juxta latus retrocurvatâ, non tamen ad marginem attingente: penultimo ramis appendicium acuminatis, imparibus, exteriore brevissimo.

Body roof-shaped, with a series of impressed lines and punctulations near the posterior margins of the segments. Segments of the pereion sinuated, but not (as in some of the species in this genus) much prolonged posteriorly. Terminal segment of the pleon large, sub-triangular, with the apex semicircularly emarginate; an elevated keel extends directly from the middle of the base to the terminal notch, and on each side of it one less prominent runs outwards close to and parallel with the base of the segment, and towards the lateral margin is curved backwards so as to terminate eventually not far from the same. Upper antennæ short; the joints of the peduncle dilated, the last of them less so than the preceding. Lower antennæ with the last joint of the peduncle as stout as but about twice as long as the penultimate joint. First pair of gnathopoda with the carpus very short, slightly prolonged and acute at its distal extremity; propodus broadly ovate, articulated with the carpus at the middle of its lower edge, which in front of the joining is armed with a close-set series of short spines; dactylus acute, arcuate. Second pair of gnathopoda (in the male) slender, the propodus not dilated, the dactylus when retracted fitting into a cavity in the lower surface of the propodus. Pereiopoda slender. Rami of the appendages of the penultimate segment of the pleon narrowly acuminate, the outer ramus very small and not half as long as the other. Colour brown, with irregular paler blotches.

Length of the largest example 30 mm.

Hab.—Royal Sound; common about rocks in shallow water, *e.g.* in a cove full of reefs adjacent to Observatory Bay, and along the rocky beach near the other English station at Swain's Haulover. Dr. Kidder also obtained a specimen near Molloy Point; and it was observed seemingly by Sir J. Hooker at Christmas Harbour (*fide* Eaton). Also Rendezvous Cove, Aucklands (Brit. Mus.).

The present species as well as *S. septem-carinata* are clearly distinguished from all that are enumerated by Professor Grube in his Monograph of the genus* by the form and direction of the ridges upon the last segment of the pleon.

[**Serolis bromleyana.**

Will.-Suhm,, Zeitsch. f. Wiss. Zool. 1874, xxiv., App. p. 19.

Hab.—In 1975 faths., S. of Kerguelen Island (Ch. Exped.).

This species is very large, and has the segments of the pereion produced at the sides into very long spines.]

* Beiträge zur Kenntnis der Gattung Serolis, in Archiv. für Naturgesch. Berlin, 1875, xli. 208–234, pls. v. & vi.

[**Serolis septem-carinata.**

(Plate XI., fig. 3.)

Serolis quadricarinata, White, MS. List Crust. Brit. Mus. 1847, p. 106:—name only, no description:—*nomen ineptum.*

Serolis septem-carinata, Miers, Ann. & Mag. of Nat. Hist. 1875, xvi., 116.

Corpus depressum, rugosum; ultimo segmentorum post-abdominis lateribus sinuatis, apice lente emarginato, dorso in longitudinem recte septem-carinatum; penultimo ramis appendicium parvis lamelliformibus subacutis, horum interiore paulo majore.

Body depressed, and (especially at the sides) rugose. Segments of the pereion with the postero-lateral angles prolonged backwards and acute; the corresponding angles of the penultimate segment of the pleon similarly produced, so that their apices lie almost in a straight line with the distal extremity of the ultimate segment. The last segment of the pleon very slightly concave at the sides, with a shallow apical emargination; dorsum traversed longitudinally by seven carinæ; of these one in the middle extends to the terminal emargination but is indistinct, while the carina next to it and next but one are somewhat thickened posteriorly, and terminate before meeting the lateral margins. Upper antennæ small and very slender; peduncle with the first two joints short and dilated, the third joint longer and slender, the fourth very small; flagellum hardly reaching to the postero-lateral angle of the first segment of the pereion. Lower antennæ with the terminal and subterminal joints of the peduncle long and subequal to one another (flagella imperfect). Gnathopoda almost similar to those of *S. latifrons*. Pereiopoda slender, the claws small. Rami of the appendages of the penultimate segment of the pleon small, lamelliform, subacute; the inner ramus rather the larger.

Length of the largest example 13 mm.

Hab.—The Crozets. Three specimens obtained by Lieut. A. Smith, R.N., are in the British Museum.

The catalogue name applied to this species by White, was probably given to it on account of the prominence of four of the ridges (the nearest two on each side of the median ridge) of the terminal segment.

Plate XI., fig. 3. *S. septem-carinata* (enlarged 2 × 2); *a*, appendage of the penultimate segment of the pleon.]

AMPHIPODA.

Orchestiidæ.

[**Hyale villosa.**

Hyale villosa, Smith, Bull. U. S. Nat. Mus. 1876, iii. 58.

Hab.—Kerguelen Island, on rocky beaches (Kidder).

Mr. Smith described this species from a single somewhat mutilated male example, nearly 10 mm. long.]

[**Lysianassa kidderi.**

Lysianassa kidderi, Smith, Bull. U. S. Nat. Mus. 1876, iii. 59.

Long. 3 to 4 mm.

Hab.—Kerguelen Island, on rocky beaches, with *Hyale villosa* (Kidder).

According to Mr. Smith (loc. cit.), "all the specimens received are apparently "immature, and the males evidently, and very likely the females also, have not "attained the adult characters." He further observes that "the characters "assigned to the genus *Lysianassa* (as restricted by Boeck) would require con- "siderable modification to admit our species."]

Anonyx kergueleni.

(Plate XI., fig. 4.)

Lysianassa kergueleni, Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 74.

Cæca, corpore lævi; angulis capitis antero-lateralibus acutis, prorsus productis; iis tertii segmentorum post-abdominis postero-lateralibus in lobis angustis et acutis reflexis, ad apices sursum leviter curvatis; segmento terminali lamelliforme bipartito.

Smooth; eyes invisible; antero-lateral angle of cephalon acute, produced below and beyond the base of the upper antenna. Third segment of the pleon with the postero-lateral angles prolonged as narrow lobes, which are more or less curved upwards at the tips, and which at their base are nearly at right angles with the posterior margin of the segment. Upper antennæ subpyriform; their first joint large and stout, the next two short; flagellum composed of about 14 joints, the first of which is longer than the next; accessory appendage 5-jointed, with a slender hair at its tip. Lower antennæ slender, rather longer than the upper; the last two joints of the peduncle longer than the one preceding them; flagellum composed of about 21 joints. The mandibles have the slender palpus inserted on a level with the strong molar tubercle. First pair of maxillæ with the inner lobe slender, ovate, and armed at its apex with two setæ; the outer lobe strong, truncate, armed at the apex with three or four spines; the last two joints of the palpus lamelliform, ovate, finely denticulated along the apical margin. Second pair of maxillæ with the lobes rather narrowly ovate, ciliated at the apex; the outer lobe the larger. The maxillipedes have the inner lobe long, reaching nearly to the extremity of the antepenultimate joint of the palpus; the outer lobe extends almost to the apex of the penultimate joint of the same, and is minutely denticulated at its rounded apex and along its inner edge; terminal joint of palpus unguiform. First pair of gnathopoda with the carpus about as long as the propodus; the propodus more than twice as long as wide, with the sides parallel up to the ciliated and obliquely truncate distal extremity; dactylus acute, reversible. Second pair of gnathopoda longer than the first, slender and weak; propodus shorter than the slender carpus, and with dense long hair at its distal end; dactylus obsolete. Coxæ of the second pair of pereiopoda

deeply emarginate behind, and with the postero-lateral angle shortly produced backwards at the apex into a broad obtuse lobe. Third, fourth, and fifth pairs of pereiopoda with the basa broadly oblong, and their straight posterior margins very minutely serrated. All of the pleopoda are biramose; the rami slender, acutely lanceolate. Telson lamelliform, longer than broad, slightly narrowed towards its apex, cleft almost to its base; the lobes mucronate.

Length of the largest example about 15 mm.

Hab.—Royal Sound. Common.

In the form of the antero-lateral angles of the cephalon, and of the postero-lateral angles of the third segment of the pleon, this species to some extent resembles *(1) *Hippomedon holbölli*, Kröyer, as described by Böeck, as well as (2) *H. abysii*, Goës, and (3) *Anonyx pumilus*, Lilljeborg,—all from the Northern Seas. But it differs from these species in having the inner lobes of the maxillipedes proportionately much longer; and in this respect it approaches more nearly to the type of structure exhibited in *Orchomene*, Böeck. The eyes also, which are well marked in the species just referred to, are not visible in any of the specimens of *A. kergueleni*.

On account of the subcheliform character of the first pair of the gnathopoda, and the divided telson, I refer this species to the genus *Anonyx*, as defined by Mr. C. Spence Bate, instead of retaining it in *Lysianassa*, where I placed it at first. I cannot refer it with certainty to any one of the numerous genera recently established by Boeck in his systematic arrangement of the Scandinavian and Arctic *Amphipoda*;† I believe, indeed, that it will be found necessary to introduce important modifications of the systematic arrangement and generic characters proposed by this author into any general revision of this difficult order, which may hereafter be undertaken, based upon the comparison of species from foreign as well as the European and Arctic seas.

Plate XI., fig. 4, *A. kergueleni* (enlarged, 2×2); *a*, end of pleon (side view); *b*, telson; *c*, 1st maxilla; *d*, 2nd maxilla; *e*, maxillipes; *f*, 1st gnathopus; *g*, 2nd gnathopus.

Atylus australis.

(Plate XI., fig. 5.)

Paramæra australis, Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 75.

Atylus australis, id. op. cit., p. 117; Smith, Bull. U. S. Nat. Mus. 1876, iii. 61.

* (1.) *Hippomedon holbölli*, Kröy., Böeck Forhandl. Vidensk. Selsk. 1871, p. 102.=*Anonyx denticulatus*, S. Bate Cat. Amphipod. Crust. Brit. Mus. 1862, p. 74, pl. xii. 2.

(2.) *Hippomedon abysii*, Goës, v. Böeck, op. cit., p. 103.

(3.) *Anonyx pumilus*, Lilljeborg, v. Böeck, op. cit., p. 110.

† De Skandinaviske og Arktiske Amphipoder, 1872–76. 4to. Christiania.

Corpus læve, carinis spinisque dorsalibus carentibus; oculis subreniformibus; antennis subæqualibus exappendiculatis; pedum primo et secundo subparibus, manu lateribus subparallelis apiceque oblique truncato, dactylo brevi; tertio segmentorum post-abdominis margine posticâ subrectâ, angulisque postero-lateralibus rotundatis; ultimo segmentorum longo, bipartito, lobis ad apices emarginatis.

Body smooth, without dorsal carinæ. Cephalon with a small subtriangular median lobe, and broad obtuse slightly prominent lateral lobes; eyes sub-reniform, black. First, three segments of the pleon with the inferior margins rounded, forming a distinct angle with the posterior margin in the second segment, and appearing to be minutely serrulate, owing to a series of small submarginal spines. Antennæ about half as long as the animal, sub-equal, slender, without an accessory appendage; the upper pair with the first two joints of the peduncle each about as long as the cephalon, and the third joint short; the flagellum with its joints increasing in length but diminishing in thickness towards the extremity; lower antennæ with the first three joints short, the fourth and the fifth joints longer; the flagellum as in the upper antennæ. Mandibles spinose at the apex; palpus inserted on a level with the strong molar tubercle, and triarticulate, the second joint much the stoutest, furnished like the third joint with long cilia towards its distal extremity. Palpi of the first pair of maxillæ 2-jointed; the second joint ciliated at the apex and more than twice as long as the first. Lobes of the second pair of maxillæ oval, ciliated at the extremities; the outer lobe rather the larger. Maxillipedes with the palpi 5-jointed, and ciliated, their third joints the largest, and their apical joints unguiform; inner lobe ciliated and at the apex spinose, reaching as far as the distal end of the second joint of the palpus, outer lobe denticulated on the inner edge, reaching to the apex of the antepenultimate joint of the palpus. Gnathopoda with the carpus shorter than the propodus, narrow at the base, enlarging distally; propodus with subparallel sides, even margins, and obliquely truncate distal extremity; upon which the acute, slender, and slightly arcuate dactylus can be closed. Third, fourth, and fifth pairs of pereiopoda with small transverse coxæ; the basa longer, with the inferior margins rounded. Pleopoda with acute, slender, subequal rami. Telson lamelliform, reaching beyond the peduncles of the last pair of the pleopoda, cleft nearly to its base; the lobes slightly emarginate at the apices. Antennæ, gnathopoda, pereiopoda, and the rami of the pleopoda, fringed with short hairs.

Length 17 mm.

Hab.—Swain's Bay and Observatory Bay. Four specimens were obtained; two of them adult.

The present species resembles *Atylus fissicauda*,* Dana, from Valparaiso, in having reniform eyes, and the lobes of the telson emarginate; but it is distinguished from it by the greater length of the telson, by the lobes of the same being somewhat narrowed towards the apices, and by their emarginations being very small and placed a little on one side. Also the gnathopoda are subequal; the fourth segment of the pleon is slightly produced over the fifth, and its posterior margin is straight; and the postero-lateral angles of all of the segments of the pleon are rounded, not acute as in *A. fissicauda*.

It is probable that a separate genus will eventually have to be formed for the reception of the two species just mentioned, and *A. austrinus*,† Spence Bate. They differ from the normal species of the genus *Atylus*, as restricted by Böeck, in being destitute of dorsal carinations, and in some other particulars. For *A. australis* I originally founded a new genus *Paramæra*, allied to *Melita* in having the inner rami of the posterior pair of pleopoda short or rudimentary, but differing from it in the absence of an accessory appendage to the upper antennæ. A subsequent examination of a series of younger examples showed, however, that my original types had sustained injury, the rami in question having been broken off and lost; and that in reality the inner rami are as well developed as the outer in *A. australis*. Yet though the genus *Paramæra* is unavailable for *A. australis*, it will hold good for the reception of *Melita tenuicornis*,‡ Dana ♀, and *Gammarus Fresnelii*,§ Audouin, mentioned at the time of its publication as apparently included in it; unless, as is probable, there be some error in the figures and descriptions published of these species.

The specimens obtained by Dr. Kidder at Kerguelen Island, and doubtfully referred to *A. australis* by Prof. Smith, differ from the typical form principally in possessing a minute accessory appendage to the upper antennæ, which does not exist in any of the specimens examined by me.

Plate XI., fig. 5. *A. australis* (enlarged); *a*, end of pleon (side view); *b*, telson; *c*, mandible; *d*, 2nd maxilla; *e*, maxillipes; *f*, 1st gnathopod; *g*, 2nd gnathopod.

Podocerus ornatus.

(Plate XI., fig. 6.)

Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 75.

Corpus læve; tribus prioribus segmentorum post-abdominis postice utrinque emarginatis, et angulis postero-lateralibus rotundatis; ultimo eorundem simplici

* Atylus fissicauda.

Iphimedia fissicauda, Dana, U. S. Explor. Exped. 1853, xiv. 929, pl. lxiii. 4.

† *Atylus austrinus*, S. Bate, Cat. Amphip. Crust. Brit. Mus. 1862, p. 137, pl. xxvi. 4.

‡ *Melita tenuicornis*, Dana, in U. S. Expl. Exped. 1853, xiv. Crust. i. 963, pl. lxvi. 5 g–m.

§ *Gammarus Fresnelii*, Aud. in Sav. Descr. Égypte, 1809, Crust. texte i. 93, pl. xi. 3.

conico; pedum anticis parvis, carpo haud manu minori, secundis magnis, carpo parvo, manu validâ ovatâ integrâ.

Cephalon small, its anterior margin forming almost a right angle with the inferior margin in front of the small round black eyes. Posterior margins of the first three segments of the pleon notched above their rounded and not prominent postero-lateral angles. Upper and lower antennæ subequal, very robust; peduncles with the last two joints subequal, much longer than the one before them, densely fringed beneath with long flexible hair; the upper with a small accessory appendage. Palpus of the mandible ciliated, very stout. Inner lobe of maxillipes very short, reaching to the apex of the antepenultimate joint of the palpus; outer lobe of the same reaching beyond the distal extremity of the penultimate joint, and denticulated along the inner margin; the joints of the palpus are ciliated, and the penultimate is the longest joint. First pair of gnathopoda small and weak; merus, carpus, and propodus somewhat dilated beneath, with long hairs on their inner margins; dactylus arcuate, acute. Second pair of gnathopoda large and well developed; merus very small, carpus inserted toward the middle of the inferior margin of the propodus, propodus large, ovate, entire beneath, dactyl strong and arcuate. Last three pairs of pereiopoda with the propodus shortly spinose, and the dactylus arcuate, acute, and reflexible. Pleopoda biramose, the last pair the shortest; each ramus has a series of short spines. Telson small, conical, simple, ciliated at the apex. Colour pale, varied with numerous small black spots.

Length 13 mm.

Hab.—Swain's Bay. Only two examples; females with ova, in a mutilated condition.

This species is distinguished by the long hairs of the antennæ, the form of the second pair of the gnathopoda, whose propodus is not dentate, the shape of the segments of the pleon, &c.

Plate XI., fig. 6. *P. ornatus* (much enlarged); *a*, end of pleon (side view); *b*, maxillipes; *c*, 1st gnathopus; *d*, 2d gnathopus.

PYCNOGONIDA.

NYMPHONIDÆ.

Nymphon antarcticum.*

(Plate XI., fig. 7.)

Nymphon gracilipes, Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 76.

Corpus gracillimum, pilis brevissimis sparsis; capite longitudine collo æquali, tuberculo oculigero obtuse subconico; prolationibus segmentorum thoracis laterali-

* It is necessary to alter the designation of this species; the name *gracilipes*, which I applied to it in 1875, having been adopted in the same year by Dr. Heller, for a species collected by the recent Austrian Expedition to the North Pole. I have no means of ascertaining to which of the two species priority of publication, in the year referred to, belongs.

bus longe distantibus; pedibus secundo articulorum tertio duplo longiori, septimo octavi æquilongo.

Very slender, sparsely clothed with very short hairs, which become more crowded towards the extremities of the legs. Head and neck subequal in length, and together about as long as the rest of the body; the former cylindrical, stout; the latter somewhat constricted in the middle. Oculigerous tubercle prominent, situated in front of the foremost pair of legs. Body terminated behind by a short obtuse cylindrical process. First (mandibular) pair of appendages triarticulate; the first joint long and slender, the second and third hairy, forming a complete chela; dactylus or third joint slender, arcuate. Second pair of appendages slender; the first joint very short, the second the longest, the last three joints hairy. Third (ovigerous) pair of appendages 11-jointed; the first joint very short, the second scarcely longer, the third and fourth again longer, the fifth the longest, the sixth to the tenth gradually decreasing in size, the eleventh minute. Legs very long and slender; the first joint and the third very short, the second joint rather longer, the fourth, fifth, and sixth very long, the seventh and eighth (first and second tarsal) subequal, straight; claws two, one very small.

Length 13 mm.

Hab.—Observatory Bay. On roots of *Macrocystis* grappled in 5–7 fathoms; a single example.

This species is allied to *N. grossipes*, O. Fab., as described by Kroyer, from the northern seas, but differs somewhat in the length of the neck, and in the proportions of the joints of the legs and appendages.*

Plate XI., fig. 7. *N. antarcticum* (natural size); *a*, body (enlarged); *b*, mandible; *c*, tarsus.

Nymphon brevicaudatum.

(Plate XI., fig. 8.)

Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 117.

Corpus robustum pilosum; capite sessili crasso, tuberculo oculigero elato obtuse cylindrico; prolationibus lateralibus thoracis parum distantibus, pedibus secundo articulorum tertio parum longior, septimo octavi æquilongo.

Rather stout, hairy. Head sessile, thick, subcylindrical; oculigerous tubercle high, slender, subcylindrical. Body short; the lateral leg-bearing lobes not remote from one another as in the preceding species, nor yet so closely contiguous as in *Tanystylum*, terminated behind by a short subcylindrical process. First pair of appendages (mandibles) well developed; the first two joints rather long, the chelæ slender. Second pair of appendages with the first joint very short, the second the

* *Pycnogonum grossipes*, O. Fab. Faun. Grœnl. 1780, 229.

Nymphon grossipes, Kröyer, Naturh. Tidsskr. 1844–45. ii. R. i. 108; id. Voy. en Scand. Crust. tab. xxxvi. 1.

longest, the third long, the fourth and fifth shorter, subequal to each other. Third (ovigerous) pair of appendages 11-jointed; the first three joints very short, the fourth and the fifth subequal in length and the longest, the sixth rather shorter, the next four very short, the eleventh minute, unguiform. Legs with the first three joints very short, the second very slightly the longest of them, fourth, fifth, and sixth long, seventh and eighth (first and second tarsal) subequal to each other, straight and slender; claws two, one very small.

Length about 7 mm.

Hab.—Kerguelen Island (Antarctic Expedition). Several specimens, mostly females bearing ova.

This species is allied to the boreal *N. brevitarse*,* Kröyer; but it is distinguished by its more robust form, its long and slender oculigerous tubercle, its longer tarsal joints, &c.

Plate XI., fig. 8. *N. brevicaudatum* (natural size); *a*, body (enlarged); *b*, appendage of second pair; *c*, ovigerous appendage; *d*, tarsus.

Acheliidæ.

Tanystylum, gen. nov.

Caput sessile, crassum. Appendicium primæ 1-articulatæ, non cheliformes; secundæ 5-articulatæ (?); tertiæ 10-articulatæ. Abdomen postice processu longo styliformi desinitum.

Head sessile, thick. First (mandibular) pair of palpiform appendages inarticulate, simple, not cheliform; second pair five-jointed (?); third (ovigerous) pair ten-jointed. Abdomen terminated by a long styliform process.

The family to which this genus belongs was characterised by Dr. Semper † in 1874 as distinguished by the possession of simple mandibular appendages from all others of the *Pycnogonida*. It occupies a position intermediate between the *Nymphonidæ* (which have the mandibular palpi fully developed, triarticulate and cheliform) and the restricted *Pycnogonidæ* (which are completely destitute of mandibular palpi.

Tanystylum differs from all the other genera of the *Acheliidæ* in having the mandibles reduced to a single joint, and in the slender styliform termination of the abdomen.

Tanystylum styligerum.

(Plate XI., fig. 9.)

Nymphon styligerum, Miers, Ann. & Mag. of Nat. Hist. 1875, xvi. 76.

Corpus robustum, hirtum; capite sessili; prolationibus segmentorum thoracis

* *Nymphon brevitarse*, Kröyer, Naturh. Tidsskr. 1844–45, ii. R. i. 115; Voy. en Scand., &c. Crust. tab. xxxvi. 4.

† *Acheliidæ*, Semper in Verh. Phys.-Med. Gesellsch. Wurzburg, 1874, vii. 274.

lateralibus contiguis ; articulorum pedis secundo et tertio longitudine subæqualibus, septimo brevissimo, octavo curvato.

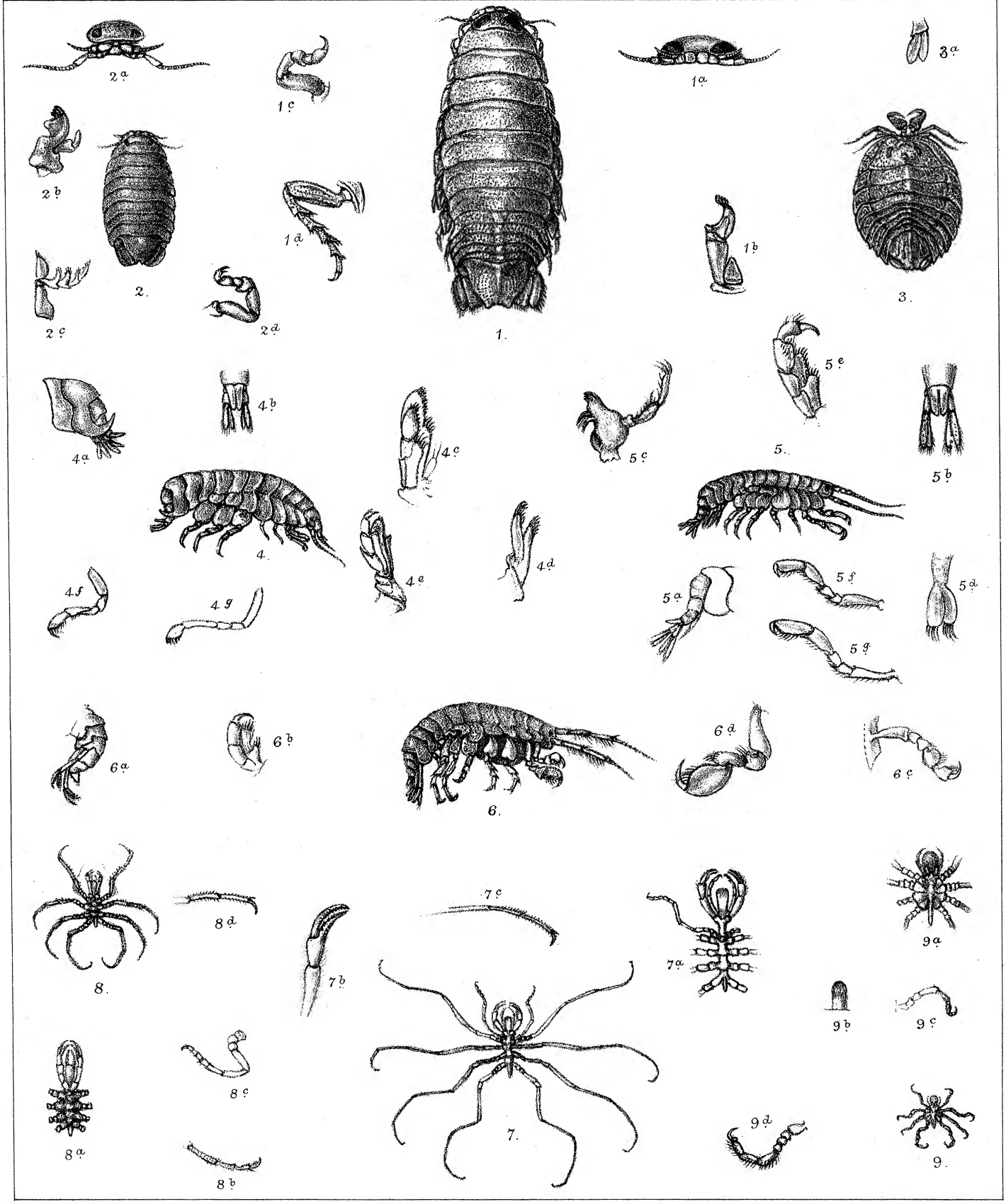
Rather stout. Head very thick and somewhat barrel-shaped, widest nearly in the middle. Body with the lobes of the leg-bearing segments in close contact with one another, and so constituting a broad mass or plastrum. First (mandibular) pair of palpi-form appendages uni-articulate (*i.e.* of a single piece) ; second pair apparently 5-jointed, with the first joint and the third very short, the second, fourth, and fifth longer ; third (ovigerous) pair 10-jointed, the first three joints very short, the fourth and fifth longer, the next four very short, the tenth minute unguiform. Legs with the first three joints very short, the next three longer, the seventh joint (first tarsal) very short, the eighth (second tarsal) longer and curved ; claws two, unequal.

Length of body about 3 mm.

Hab.—Observatory Bay ; on roots of *Macrocystis* grappled in 5–7 faths. (two specimens only.)

The hairiness of the palpi makes it extremely difficult to ascertain positively the number and proportionate lengths of their component joints. The styliform termination of the body appears to arise from the dorsal surface of the abdomen and from between the bases of the last pair of the legs.

Plate XI., fig. 9, *T. styligerum* (nat. size) : *a*, body (enlarged) ; *b*, oculigerous tubercle ; *c*, ovigerous appendage ; *d*, leg.



G.B. Sowerby del. et lith.

Mintern Bros imp.